AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Original) A rotational angle detecting device for a wave gear device that includes a ring-shaped rigid internal gear, a flexible external gear, and a wave generator with an elliptical shape for flexing the flexible external gear into an elliptical shape so as to partially engage the rigid internal gear and for moving engagement positions of the two gears in a circumferential direction, comprising:

first, second, and third strain detecting elements that are disposed at intervals of 120° in the circumferential direction on one of the rigid internal gear and the flexible external gear;

signal component extracting means that extracts, from outputs of the first to third strain detecting elements, signal components that appear as two cycles of a sine wave per rotation of the wave generator and are synchronous with a rotational angle of the wave generator;

signal processing means that generates two-phase sinusoidal signals that are 90° out of phase by carrying out a coordinate transformation on the three-phase sinusoidal signals that are 120° out of phase and have been extracted from the outputs of the first to third strain detecting elements; and

angle calculating means that calculates a rotational angle of the wave generator based on the two-phase sinusoidal signals.

2. (Original) A rotational angle detecting device for a wave gear device according to Claim 1, wherein the flexible external gear includes a cylindrical trunk part, a ring-shaped diaphragm that extends from one end of the cylindrical trunk part outward or inward in a

radial direction, a thick boss that is continuous with one of an outer circumferential edge or an inner circumferential edge of the diaphragm, and external teeth formed on an outer circumferential surface portion of an opening end of the cylindrical trunk part.

3. (Original) A rotational angle detecting device for a wave gear device according to Claim 2, wherein the first to third strain detecting elements are disposed on the flexible external gear.

4. (Currently Amended) A rotational angle detecting device for a wave gear device according to ~~any of~~ Claim 1 ~~to Claim 3~~, wherein the first to third strain detecting elements respectively include a plurality of strain gauges.

5. (Currently Amended) A driving mechanism having a servo motor, a wave gear device, and the rotational angle detecting device as set forth in ~~any one of Claims 1 to 3~~ Claim 1,

wherein a motor shaft of the servo motor is fixed to a wave generator of the wave gear device, and

a rotational angle of the motor shaft is detected by the rotational angle detecting device.

6. (Original) A rotational angle detecting method for detecting a rotational angle of a wave generator in a wave gear device having a ring-shaped rigid internal gear, a flexible external gear, and the wave generator with an elliptical shape for flexing the flexible external gear into an elliptical shape so as to partially engage the rigid internal gear and moving engagement positions of the two gears in a circumferential direction, comprising steps of:

disposing first to third strain detecting elements at intervals of 120° in the circumferential direction on one of the rigid internal gear and the flexible external gear;

extracting, from outputs of the first to third strain detecting elements, signal components that appear as two cycles of a sine wave per rotation of the wave generator and are synchronous with a rotational angle of the wave generator;

generating two-phase sinusoidal signals that are 90° out of phase by carrying out a coordinate transformation on the three-phase sinusoidal signals that are 120° out of phase and have been extracted from the outputs of the strain detecting elements; and

calculating a rotational angle of the wave generator based on the two-phase sinusoidal signals.